REMARKS/ARGUMENTS

Objection to the Drawings

In paragraph 4 of the Detailed Action, the Examiner has objected to Figures 1 and 2 as not being labelled "Prior Art". In the absence of any showing by the Examiner that these figures are prior art, Applicant would prefer not to so label these drawings. Applicant specifically included a description of the drawings in the "Detailed Description of the Preferred Embodiments" section. Regarding Figure 2, Applicant notes that this figure does not correspond to Prior Art in that at least one feature is new. In particular, with reference to page 11, line 23 to page 12, line 9 reference is made to at least one feature, for example speech encoder 55, which has new functionality. Also, Figure 1 shows the mobile station 26 which is new.

The Examiner is respectfully requested to withdraw his objection to the drawings.

Objection to the Specification

The Examiner has objected to the specification stating that "the specification does not have a detailed description of claimed subject matter of claims 7-11". A detailed discussion on how each of these claims is supported in the specification is given below.

Claim 7

With reference to Figure 3, shown is an embodiment in which editing is done first before buffering. Support for claim 7 is found on page 3, lines 38 to 32, for example. In particular, on page 3, lines 30 to 32 processing steps are performed in different sequences including...buffering first and then editing. Furthermore, further support for the claim feature of claim 7 is found on page 24, lines 11 to 13. Given the description with reference to Figure 3 in which editing is performed before buffering, one skilled in the art would understand how to implement buffering before editing. The Examiner is respectfully requested to withdraw his objection to the specification regarding claim 7.

Claim 8

Support for claim 8 can be found on page 3, line 32 to page 4, line 3. In particular, stated in this passage is "the editing and buffering can each be done on different representations of the information segment including the information segment as detected or as subsequently coded in frames". Furthermore, given the description of Figure 3, one of skill in the art would understand how to implement the additional features of claim 8. The Examiner is respectfully requested to withdraw his objection to the specification regarding claim 8.

Claim 9

Support for claim 9 can be found on page 3, line 32 to page 4, line 3. In particular, on page 3, line 32 to page 4, line 3, stated is "the editing and buffering can be done on different representations of the information segment...as detected or as subsequently coded in frames". Furthermore, given the description of Figure 3, one of skill in the art would understand how to implement the additional features of claim 9. The Examiner is respectfully requested to withdraw his objection to the specification regarding claim 9.

Claim 10

Support for claim 10 is found on page 4, lines 4 to 22 in which there is a discussion of an information editor operable to edit each information segment detected so as to produce a respective shortened information segment. Such a device is found as speech/pause edit 104 (see Figure 3) of a speech encoder 55. On page 11, lines 24 to 26 "the speech encoder 55 proceeds to edit the digitized speech data...to remove perceptually insignificant portions. It follows that the speech data is shortened. The Examiner is respectfully requested to withdraw his objection to the specification having regard to claim 10.

Claim 11

Claim 11 contains claim features of similar scope to those of claims 9 and 10. The Examiner is respectfully requested to withdraw his objection to the specification regarding claim 11 for the same reasons as given above with reference to claims 9 and 10.

35 U.S.C. 102 Claim Rejections

In paragraph 7 of the Detailed Action, the Examiner has rejected claims 1 to 6, 12 to 17, 22 to 30, and 33 to 38 under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5,436,899 (Fujino *et al.*). Given below is a detailed discussion on how claims 1 to 6, 12 to 16, 22 to 29, and 33 to 38 are patentable over Fujino *et al.*

By way of overview, in Fujino *et al.* a multiplexed transmission system is disclosed. The system is configured by a sound coding unit for coding voice input information. A multiplexing unit multiplexes information into a multiplexed signal for transmission in a single channel. In Fujino *et al.*, editing is performed to allow an increase in traffic through the channel and buffering is used to absorb a difference in transmission speeds on a multiplexed side and a packet network side of a packet interface. In the present application embodiments of the invention are described in the context of a multi-access system in which multiple users share transmission resources. However, this sharing is not a "multiplexed" sharing. Rather multiple transmitters independently transmit on a given transmission resource in sequence, and in this sense the transmission resource is shared. In these systems, transmission resources are allocated before transmission occurs and in conventional systems frames that are ready to be transmitted before the transmission resources are allocated have been typically discarded resulting in clipping. In the present invention, editing and buffering information segments, clipping can be eliminated while reducing transmission delays. In contrast, in the multiplexed system of Fujino *et al.* there is no disclosure or consideration of resource allocations as described above and there is no consideration of whether to transmit based on whether transmission resources have been allocated.

Claim 1

Claim 1 has been amended to specify the application in a multi-access system and to change the "whereby" clause to a "wherein" clause.

Claim 1 is directed to a method of transmitting and recites:

"detecting the start of an information segment being generated in real-time".

The Examiner has referred to element 51 (VDET) of Figure 17 as disclosure for this

10

claim feature. As discussed in column 14, lines 61 to 62 element 51 is used for detecting silent sections by using an output from an A/D (Analog-2-Digital) converting part 49. With respect, only silent sections are detected in the multiplexed system of Fujino *et al.* and there is no disclosure of any detection of the start of an information segment as in the case of a multi-access system.

Claim 1 also recites:

"editing and buffering the information segment or a first representation thereof to produce a second representation".

The Examiner has referred to columns 13, lines 18 to 36; and column 25, lines 12 to 48 as disclosure for this claim feature. The passage in column 13, lines 18 to 36 refers to a multiplexing method where voice coded information is split for transmission into core bits and supplementary bits. In column 25, lines 24 to 28, with reference to Figure 36 "a header attacher 141 attaches a packet header to the packet received from the multiplexer side. After being assembled, packets are outputted to the packet network side through a speed difference absorption buffer 142". The Examiner is equating buffered packets with "a second representation" and as will be discussed below, this equivalence is inappropriate.

Claim 1 also recites:

"after transmission resources have been allocated, starting to transmit the second representation".

The Examiner makes reference to "they are ready for transmission" found in column 25, line 45 of Fujino *et al.* as disclosure for this claim feature. The passage found in column 25, lines 42 to 47 discloses how "packets are transmitted in a burst when enough packets are accumulated and they are ready for transmission". With respect, this has nothing to do with resource allocations – this is simply a rule that has been established as to when to transmit. In particular, as discussed above in Fujino *et al.* there are no considerations for transmission resources being allocated as in multi-access systems. As such, this claimed feature is not disclosed in Fujino *et al.* Furthermore, since there is no disclosure of resource allocations as

11

contemplated in claim 1, equating the "buffered packets" of Fujino *et al.* with the "second representation" is inappropriate.

Finally, claim 1 has been amended to recite:

"wherein the editing and buffering is done to compensate for transmission resource allocation delays".

The Examiner has referred to column 34, lines 46 to 65 as disclosure for this claimed feature and states "shows a total delay time is reduced". With respect, this passage refers to multiplexing lags in n pipeline multiplexations. In particular, a delay time T which is a difference in time in lags by non-pipeline multiplexers and demultiplexers, and lags by n pipeline multiplexers and demultiplexers. With respect, this has nothing to do with compensation of "resource allocation delays". In particular, again in Fujino *et al.* there is no disclosure or considerations for transmission resources being allocated and therefore there are also no considerations for resource allocation delays.

None of the above features of claim 1 are disclosed by Fujino *et al.* The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 1.

Claims 2 to 6, 13, 14, and 22 to 24

Each one of claims 2 to 6, 13, 14, and 22 to 24 depends directly or indirectly on claim 1 and should be allowed for the same reasons as discussed above with reference to claim 1. The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claims 2 to 6, 13, 14, and 22 to 24.

Claim 12

Claim 12 depends on claim 1 and should be allowed for the same reasons as discussed above with reference to claim 1. Furthermore, claim 12 recites:

"upon detecting the start of the information segment, the method further comprises immediately requesting transmission resources to transmit the information segment".

The Examiner has referred to column 14, lines 47 to 62 of Fujino *et al.* as disclosure for this claim feature and states 'reads on "a call detector (CDET) 46 for detecting a call through monitoring by SS and SR signals"'. With respect, this passage referred to by the Examiner discloses the structure of the apparatus of Figure 17 and Applicant submits that there is no disclosure of upon detecting the start of the information segment, immediately requesting transmission resources to transmit the information segment. In particular, as indicated by the Examiner the call detector 46 is used for detecting a call through monitoring by SS and SR signals. With respect, this is not the same as upon detecting the start of the information segment, requesting transmission resources to transmit the information segment. Furthermore, as discussed above, with reference to claim 12, in Fujino *et al.* there is no disclosure or considerations for transmission resources.

The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 12.

Claim 15

Claim 15 depends on claim 1 and should be allowed for the same reasons as discussed above with reference to claim 1. Furthermore, claim 15 recites:

"before transmitting the second representation, the method further comprises passing the second representation through a frame erasure concealment unit to prevent corruption".

The Examiner has referred to column 13, lines 18 to 36 of Fujino *et al.* as disclosure for this claim feature and states "discarding supplementary bits necessary deteriorates sound quality, but permits transmission of core bits, thus ensuring the minimum sound quality provided by core bits". The discarding step referred to by the Examiner forms part of a multiplexing process described in column 13, lines 18 to 36. With respect, the Examiner has already referred to this passage (the multiplexing process) for the editing and buffering step of base claim 1 which is to produce a second representation. The Examiner is now using the same step as disclosure for "passing the second representation through a frame erasure concealment unit to prevent corruption". With respect, Applicant submits that it makes no sense to refer to the same step for: 1) producing a second representation; and 2) and passing the second representation through a

13

frame erasure concealment unit as these are two distinct steps.

The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 15.

Claim 16

Claim 16 depends on claim 15 and should be allowed for the same reasons as discussed above with reference to claim 15. The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 16.

Claim 17

Claim 17 has been cancelled thereby rendering the Examiner's rejection of this claim moot. The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 17.

Claim 25

Claim 25 depends on claim 24 and should be allowed for the same reasons as discussed above with reference to claim 24. Furthermore, claim 25 contains claim features of similar scope to those of claim 15 and should also be allowed for the same reasons as discussed above with reference to claim 15.

The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 25.

Claim 26

Claim 26 depends on claim 25 and should be allowed for the same reasons as discussed above with reference to claim 25. The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 26.

Claims 27 to 29 and 33 to 38

Claims 27 to 29 and 33 to 38 are directed to an apparatus and should be allowed for the

14

same reasons as discussed above with reference to claims 1 to 6, 12 to 16, and 22 to 26. The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claims 27 to 29 and 33 to 38.

Claim 30

Claim 30 has been cancelled thereby rendering the Examiner's rejection of claim 30 moot. The Examiner is respectfully requested to withdraw his 35 U.S.C. 102(b) rejection of claim 30.

Furthermore, a further discussion in favour of claims 27, 29, 35, and 36 will now be given.

Claim 27

Claim 27 recites:

"a buffer operable to buffer each shortened information segment until transmission resources are allocated to produce a buffered information segment".

With respect, in the rejection of claim 1 the Examiner has referred to element 140 of Figure 35 for "buffering". As shown in Figure 36 of Fujino *et al.*, the buffering is provided by the speed difference absorption buffer 142 which, as discussed above, is used as a transmission holding buffer. In particular, as disclosed in column 25, lines 36 to 42 the speed difference absorption buffer 142 absorbs a difference between multiplexed frames inputted at speed V_1 from a multiplexer side and a transmission speed V_2 to a packet network side. Applicant submits that there is no disclosure of a buffer operable to buffer each shortened information segment until transmission resources are allocated to produce a buffered information segment for the same reasons as discussed above with reference to claim 1.

Claim 29

Claim 29 recites:

"a coder connected to the information editor and operable to coat each shortened information segment into a respective plurality of frames".

15

With respect, the Examiner has not identified such a coder. As such, not all features of claim 29 have been identified in the prior art by the Examiner and therefore a *prima facie* case of obviousness has not been established.

Claim 35

Claim 35 recites:

"a frame erasure concealment unit connected to receive each speech segment buffered and operable to prevent corruption before transmission".

With respect, the Examiner has not identified a frame erasure concealment unit <u>connected to receive each speech segment buffered</u>. As such, not all features of claim 35 has been identified in the prior art by the Examiner and therefore a *prima facie* case of obviousness has not been established.

Claim 36

Claim 36 has been amended to recite:

"a protocol handler connected between the frame erasure concealment unit and the transmitter, the protocol handler being operable to place each speech segment buffered in one or more packets for transmission to a node".

Applicant submits that claim 36 has been amended for purposes of providing proper antecedent basis for expressions found in this claim and not for purposes of overcoming any prior art rejection. Furthermore, Applicant submits that the Examiner has not identified in Fujino *et al.* a protocol handler as claimed in claim 36. As such, not all features of claim 36 have been identified in the prior art by the Examiner and therefore a *prima facie* case of obviousness has not been established.

35 U.S.C. 103 Claim Rejections

In paragraph 9 of the Detailed Action, the Examiner has rejected claims 7 to 11 under 35 U.S.C. 103(a) as being unpatentable over Fujino *et al.* in view of Rappaport (Wireless

16

Communications Principles and Practice). Given below is a discussion as to how claims 7 to 11 are patentable over Fujino *et al.* and Rappaport.

To begin, there are three requirements for establishing a *prima facie* case of obviousness: 1) all features must be present; 2) there must be an expectation of a reasonable chance of success; and 3) there must be some suggestion or motivation in the prior art to combine the references. As discussed below, these requirements are not satisfied in establishing a *prima facie* case of obviousness against claims 7 to 11.

Claim 7

Claim 7 depends from claim 1 and, as such, is distinguishable over Fujino *et al.* for all of the reasons discussed above. Accordingly, claim 7 has been amended to be directed to an apparatus to transmit information in a multi-access system.

Claim 7 depends on claim 1 and should be allowed for the same reasons as discussed above with reference to claim 1. In particular, the Examiner's rejection of claim 7 is based on the premise that Fujino *et al.* disclose all of the claim features of base claim 1 and Applicant submits that Rappaport fails to disclose the features of base claim 1 that Fujino *et al.* fail to disclose. In particular, as discussed above with reference to claim 1, Fujino *et al.* fail to disclose the detecting, editing and buffering, and transmit steps of base claim 1. Furthermore, Rappaport also fails to disclose the detecting, editing and buffering, and transmit steps of base claim 1. As such, requirement 1) for a *prima facie* case of obviousness cannot be satisfied.

Regarding requirement 3), as discussed above with reference to claim 1, claim 1 recites "editing and buffering...to produce a second representation", and claim 7 recites:

"wherein the buffering and editing comprises buffering and then editing".

With respect, in Fujino *et al.* it makes no sense to perform the buffering step referred to by the Examiner and then perform the editing step referred to by the Examiner. In particular, in his rejection of claim 1 the Examiner has referred to element 140 in which there is a speed difference absorption buffer 142 for the buffering step. As discussed above with reference to

17

claim 27, the speed difference absorption buffer 142 absorbs a difference between multiplexed frames inputted at a speed V_1 from a multiplexer side and a transmission speed V_2 to a packet network side. With respect, modifying Fujino et al. to apply the speed difference absorption buffer 142 before any editing simply makes no sense as there would be no existing multiplexed frames. As such, editing and then buffering requires a modification to Fujino et al. which renders the system of Fujino et al. unworkable and therefore this modification teaches away from Fujino et al. As such, requirement 3) for a prima facie case of obviousness cannot be satisfied.

Not all requirements for a prima facie case of obviousness can be satisfied. The Examiner is respectfully requested to withdraw his 35 U.S.C. 103(a) rejection of claim 7.

Claim 8

Claim 8 depends on claim 7 and should be allowed for the same reasons as discussed above with reference to claim 7. The Examiner is respectfully requested to withdraw his 35 U.S.C. 103(a) rejection of claim 8.

Claims 9 to 11

Claims 9 to 11 each depend directly or indirectly on claim 7 and should be allowed for the same reasons as discussed above with reference to claim 7. The Examiner is respectfully requested to withdraw his 35 U.S.C. 103(a) rejection of claims 9 to 11.

In paragraph 10 of the Detailed Action, the Examiner has rejected claims 18 to 21 and 31 to 32 under 35 U.S.C. 103(a) as being unpatentable over Fujino et al. in view of Applicant's admitted prior art (Figure 1). The Examiner is referring to Figure 1 as prior art in his rejection of claims 18 to 21 and 31 to 32. With respect, Figure 1 has been described as part of the Detailed Description of the Preferred Embodiments section on pages 6 to 8. In particular, Applicant's disclosure describes embodiments of the invention in the context of a multi-access wireless system. In making use of Figure 1 Applicant submits that the Examiner's conclusion of obviousness is based on improper hindsight reasoning (see MPEP 2145) In re McLaughlin 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). In particular, the multi-access wireless system of Figure 1 is described on pages 6 to 8 of the specification and then further description of

18

the invention is given by way of example in relation to upstream transmission of voice (see for example page 8, lines 25 to 28). In the description, an example implementation is described in the context of the system of Figure 1 and Applicant submits that use of this hindsight information cannot be used to establish a *prima facie* case of obviousness. The Examiner is respectfully requested to withdraw his 35 U.S.C. 103(a) rejection of claims 18 to 21 and 31 to 32.

Claim 18 and 31 previously depended on cancelled claims 17 and 30, respectively and their claim dependencies have been amended.

New claims 39 to 44 have been added and each depend on one of claims 1 and 32. Applicant submits that the additional features of new claims 39 to 44 are new and un-obvious over by the prior art cited by the Examiner.
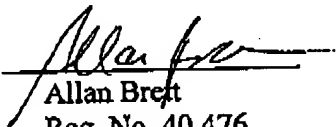
Finally, the specification has been amended on page 12, line 9 to delete the expression "Once".

In view of the forgoing, early favorable consideration of this application is earnestly solicited.

The Examiner is respectfully requested to pass this application to allowance but, if there are any outstanding issues, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,

SMART & BIGGAR

By _____

Allan Breft
Reg. No. 40,476
Tel.: (613) 232-2486 ext. 323

Date: February 19, 2004

RAB:MPP:acb

19